Remarks

In the Office Action of December 29, 2005, the Examiner rejected pending

claims 1-17 and 19-21 under 35 U.S.C. § 103(a). Specifically, the Examiner

rejected claims 1-9, 12-17, and 19-21 under 35 U.S.C. § 103(a) over U.S. Patent

No. 6,697,873 to Yik et al. ("Yik") in view of U.S. Patent No. 6,810,037 to

Kalapathy et al. ("Kalapathy"), and further in view of U.S. Patent Application

Publication 2004/0202184 to Yazaki et al. ("Yazaki"); rejected claim 10 under 35

U.S.C. § 103(a) over Yik, Kalapathy, and Yazaki and further in view of U.S.

Patent No. 6,618,760 to Aramaki et al. ("Aramaki"); and rejected claim 11 under

35 U.S.C. § 103(a) over Yik, Kalapathy, and Yazaki and further in view of U.S.

Patent Application Publication No. 2003/0026259 to Brown ("Brown").

Rejection of Claims 1-9, 12-17, and
19-21 In View of Yik, Kalapathy, and Yazaki

Claim 1 is directed to a multiport switch that comprises a plurality of

elements, including a plurality of receive ports, a plurality of transmit ports, the

transmit ports configured to transmit frames in the packet-switched network, and

an internal rules checking circuit. The internal rules checking circuit is coupled to

the receive ports and is configured to determine frame forwarding information for

the received frames. The internal rules checking circuit includes a plurality of

address lookup tables, each of the address lookup tables including a plurality of

addressable table entries for storing information relating to the frames and each

of the addressable table entries including at least a vector field that identifies

ports corresponding to the frames of the addressable table entries and an

address field that identifies network addresses of the frames. Further, the

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internal rules checking circuit is configured to write to the addressable entries of the plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables.

In rejecting claim 1 under 35 U.S.C. § 103(a), the Examiner concedes that Yik fails to explicitly disclose an internal rules checking circuit including a plurality of address lookup tables, in which the internal rules checking circuit is configured to write to the addressable entries of the plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables. (Office Action, page 3). For this feature, the Examiner relies on Kalapathy.

Applicants respectfully disagree with the Examiner's interpretation of Kalapathy. Kalapathy, as with Yik, does not disclose or suggest, as is recited in claim 1, a plurality of address lookup tables in which multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables.

Kalapathy is directed to a method for searching a table in a network switch. (Kalapathy, Abstract). According to Kalapathy, a method for searching a primary address table within a network switch includes the steps of dividing the primary address table into a first and second address sub-tables, storing even numbered memory address locations from the primary address table within the first address sub-table in sorted order, and storing odd numbered memory address locations from the primary address table within the second address sub-table in sorted order. (Kalapathy, Abstract). Figures 39, 40a, and 40b of

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Kalapathy, which are specifically pointed to by the Examiner in the Office Action, illustrate this primary address table as a single address table 21 that is split into two half sized tables 211 and 212. (Kalapathy, Figures 39 and 40, and column 24, lines 10-41). As shown in Figure 40b, half sized table 211 includes the even address entries from table 21 and half sized table 212 includes the odd address entries from table 21.

Applicants submit that splitting a single address table into two address tables based on whether an address is odd or even, as disclosed by Kalapathy, is significantly different than, as is recited in claim 1, writing multiple entries having the same address to alternate ones of a plurality of address tables. In stark contrast, in Kalapathy, it appears that multiple entries that have the same address will always be written to the same address table. Accordingly, Kalapathy does not disclose, and in fact explicitly teaches away from, as is recited in claim 1, an internal rules checking circuit configured to write to the addressable entries of a plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables. As the Examiner concedes, Yik also does not disclose or suggest this feature of claim 1.

Arguments similar to the arguments presented above, relating to Yik and Kalapathy, were made in the previous response, filed on October 11, 2005. The Examiner did not address these arguments in the latest Office Action. If the Examiner persists in the this rejection under 35 U.S.C. § 103(a), Applicants request that the Examiner specifically respond to the points made above.

Further, in the rejection of claim 1 under 35 U.S.C. § 103(a), the Examiner

additionally relies on Yazaki. (Office Action, page 3). In relying on Yazaki, the Examiner states, "[f]urthermore, Yazaki teaches multiple entries having the same address in the address tables written to different ones of the address lookup tables (page 7, paragraph 112)." (Office Action, page 3). The section of Yazaki relied upon by the Examiner, paragraph 112, states:

> Thus, in the embodiment shown in FIG. 8, a list table 760 comprised of a plurality of sub-list tables each corresponding to an input line number is provided aside from an entry table 750 which stores a plurality of entries 511-1 . . . 511-H therein. Data block (list) groups 540 each indicative of a pointer address of an entry associated with the input line are stored in their corresponding sub-list tables. When it is desired to define entries having the same flow condition for a plurality of input lines, lists including the same pointer address may be registered in a plurality of sub-list tables.

This section of Yazaki discloses a list table that includes a plurality of sub-list tables. This section of Yazaki, however, does not appear to disclose, as the Examiner alleges, multiple entries having the same address in an address table written to different ones of address lookup tables. Further, Yazaki, as with Yik and Kalapathy, can not be said to disclose or suggest an internal rules checking circuit configured to write to the addressable entries of a plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables.

Applicants submit that the Office Action is not clear as to why the Examiner is relying on Yazaki. The Examiner appears to contend that Yik and Kalapathy disclose each of the features recited in claim 1. The Examiner does not state any particular portion of claim 1 that is allegedly disclosed by Yazaki. If the Examiner continues to rely on Yazaki in rejecting claim 1, Applicants request

that the Examiner more clearly articulate how Yazaki is being applied in the rejection of claim 1. In any event, as noted above, Applicants submit that Yazaki does not disclose or suggest many of the features recited in claim 1, including the features of the internal rules checking circuit that are also not disclosed by Yik and Kalapathy.

For at least these reasons, Applicants submit that Yik, Kalapathy, and Yazaki, even if combined as the Examiner suggests, do not disclose or suggest each of the features recited in claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) is improper and should be withdrawn. The rejection of dependent claims 2-6 should also be withdrawn, at least by virtue of the dependency of these claims from claim 1.

Independent claim 7 is directed to a method of using a lookup table implemented with a first lookup sub-table and a second lookup sub-table. The method includes calculating a row address of the lookup table based on a hash value of a network address associated with an entry in the lookup table and storing the entry in one of the first sub-table and the second sub-table at the calculated row address by alternately storing multiple entries having identical calculated row addresses in the first and second sub-tables. The method further includes accessing the entries stored in the lookup table by simultaneously reading entries stored at a desired address in the first and second sub-tables.

Neither Yik nor Kalapathy, either alone or in combination, disclose or suggest the features recited in claim 7. For example, neither Yik nor Kalapathy disclose or suggest, as recited in claim 7, "storing the entry in one of the first sub-table and the second sub-table at the calculated row address by alternately

storing multiple entries having identical calculated row addresses in the first and second sub-tables." The Examiner concedes that Yik does not disclose this feature of claim 7, but contends that this feature of claim 7 is disclosed by Kalapathy and that one of ordinary skill in the art would have found it obvious to modify Yik in view of Kalapathy to obtain the features of claim 7. (Office Action, pages 5 and 6).

Similar to the discussion above with regard to claim 1, Kalapathy does not disclose or suggest storing an entry in sub-tables by alternately storing multiple entries having identical calculated row addresses in first and second sub-tables, as is recited in claim 7. In contrast, in Kalapathy, multiple entries that have the same address are written to the same address table. Storing multiple entries that have a same address to a single address table cannot be said to disclose or suggest alternately storing entries in first and second sub-tables. Thus, Kalapathy does not cure the admitted deficiencies of Yik with regard to claim 7.

Arguments similar to the arguments presented above for claim 7, relating to Yik and Kalapathy, were made in the previous response, filed on October 11, 2005. The Examiner did not address these arguments in the latest Office Action. If the Examiner persists in this rejection under 35 U.S.C. § 103(a), Applicants request that the Examiner specifically respond to the points made above.

In rejecting claim 7, the Examiner also relies on Yazaki. (Office Action, page 6). Specifically, the Examiner relies on paragraph 112 of Yazaki to disclose "identical row addresses in the sub-tables." (Office Action, page 6). As with the rejection of claim 1, Applicants are unsure why the Examiner is relying on Yazaki, as the Examiner appears to contend that Yik and Kalapathy disclose or suggest

each feature of claim 7. In any event, Applicants submit that Yazaki, as with Yik and Kalapathy, fails to disclose or suggest, for example, as is recited in claim 7, "storing the entry in one of the first sub-table and the second sub-table at the calculated row address by alternately storing multiple entries having identical calculated row addresses in the first and second sub-tables."

For at least these reasons, the rejection of claim 7 based on Yik, Kalapathy, and Yazaki should be withdrawn. The rejection of claims 8, 9, 12, and 13 based on Yik and Kalapathy should also be withdrawn, at least by virtue of the dependency of these claims on claim 7.

Independent claim 14 and dependent claims 15-17 also stand rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, Yazaki.

Claim 14 is directed to a method of storing information in a lookup table implemented as first and second sub-tables. The method includes calculating a first row address at which the information is to be stored and determining to store the information in the first sub-table when a previous entry at the first row address was stored in the second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table. The method further includes storing the information in the determined sub-table in the first available entry at the first row address as a table entry.

In rejecting claim 14, the Examiner concedes that Yik does not disclose "determining to store the information in the first sub-table when a previous entry at the first row address was stored in the second sub-table and determining to store the information in the second sub-table when the previous entry at the first

row address was stored in the first sub-table," but contends that it would have been obvious to modify Yik in view of Kalapathy to include this feature. (Office Action, page 7). Again, Applicants respectfully disagree with the Examiner's interpretation of Kalapathy. As mentioned above, for any particular address, Kalapathy explicitly discloses storing that entry in the same table. Specifically, Kalapathy stores even address entries in one sub-table and odd address entries in another sub-table. Accordingly, Kalapathy cannot be said to disclose or suggest, as is recited in claim 14, determining to store the information in a first sub-table when a previous entry at the first row address was stored in a second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table. Thus, Kalapathy does not cure the admitted deficiencies of Yik with regard to claim 14.

Arguments similar to the arguments presented above for claim 14, relating to Yik and Kalapathy, were made in the previous response, filed on October 11, 2005. The Examiner did not address these arguments in the latest Office Action. If the Examiner persists in this rejection under 35 U.S.C. § 103(a), Applicants request that the Examiner specifically respond to the points made above.

In rejecting claim 14, the Examiner additionally relies on Yazaki. (Office Action, page 7). As with the rejection of claims 1 and 7, Applicants are unsure why the Examiner is relying on Yazaki, as the Examiner appears to contend that Yik and Kalapathy disclose or suggest each feature of claim 14. In any event, Applicants submit that Yazaki, as with Yik and Kalapathy, fails to disclose or suggest, for example, as is recited in claim 14, determining to store the information in a first sub-table when a previous entry at the first row address was

stored in a second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table.

For at least these reasons, the rejection of claim 14 based on Yik, Kalapathy, and Yazaki should be withdrawn. The rejection of claims 15-17 based on Yik and Kalapathy should also be withdrawn, at least by virtue of the dependency of these claims on claim 14.

Independent claim 19 and its dependent claims 20 and 21 also stand rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, and Yazaki.

Claim 19 is directed to a multiport switch that comprises, among other things, "a logic device configured to alternately write addressable table entries for a particular table address to the plurality of address tables." Based on rationale similar to that given above, Applicants submit that neither Yik nor Kalapathy, either alone or in combination, disclose or suggest the features of this claim. Specifically, as discussed above, Kalapathy does not disclose or suggest alternately writing addressable table entries for a particular table address to a plurality of address tables. Instead, Kalapathy explicitly discloses writing to a first sub-table when a table address is even and writing to a second sub-table when a table address is odd.

In rejecting claim 19, the Examiner references Yazaki in the statement of the rejection, (Office Action, page 8), but then does not further reference Yazaki when discussing the features of claim 19. In any event, Applicants submit that Yazaki does not cure the above-noted deficiencies of Yik and Kalapathy with regard to claim 19.

For at least these reasons, Applicants submit that Yik, Kalapathy, and Yazaki, alone or in combination, do not disclose or suggest each of the features of claim 19. Accordingly, the rejection of claim 19, as well as the rejections of dependent claims 20 and 21 are improper and should be withdrawn.

Rejection of Claim 10
In View of Yik, Kalapathy, Yazaki, and Aramaki

Dependent claim 10 stands rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, Yazaki and Aramaki. Applicants submit that Aramaki does not disclose or suggest the deficiencies of Yik, Kalapathy, and Yazaki, as previously discussed, with regard to claims 7 and 8, from which claim 10 depends.

For at least these reasons, Applicants submit that the rejection of claim 10 is improper and should be withdrawn.

Rejection of Claim 11
In View of Yik, Kalapathy, Yazaki, and Brown

Dependent claim 11 stands rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, Yazaki, and Brown. Applicants have reviewed Brown, and submit that Brown does not cure the above mentioned deficiencies of Yik, Kalapathy, and Yazaki. Accordingly, the rejection of claim 11 should be withdrawn.

Conclusion

In view of the foregoing remarks, Applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this

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application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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